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PCT-Patent Application PCT/EP2004/003259

3M ESPE AG

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Our Ref.: K2600 PCT

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English translation of the International Preliminary Examination Report**Re item V****Reasoned statement with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement**

Reference is made to the following document:

D1: WO-A-03/007834

Document D1 is considered to be the closest prior art vis-à-vis the subject-matter of claim 1.

Said document discloses (the references in brackets relate to this document): A method for processing data about the three-dimensional shape of a dental prosthesis (abstract), the method comprising the steps of:

- (a) providing input data which represent a three-dimensional surface of the tooth stump prepared for the prosthesis (claim 1, lines 1-4);
- (b) providing minimal stability requirements for the prosthesis (page 8, lines 8, 9);
- (c) generating control data from said input data, said control data representing a control surface which meets the minimal stability requirements (page 8, line 9);
- (d) generating design data which represent the three-dimensional shape of the prosthesis (page 8, line 9);

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Thus, the subject-matter of claim 1 differs from the known method in that

- (e) the shape of the prosthesis is displayed together with the control surface on a monitor, wherein
- (f) the design data are modified by the user based on a visual comparison of the displayed design data and the displayed control surface in order to meet the minimal stability requirements; and
- (g) the actual design of the prosthesis is displayed together with the control surface.

Thus, the subject-matter of claim 1 is new (Article 33(2) PCT).

Consequently, the object to be achieved with the present invention is to provide a method which enables to shape a surface of the prosthesis in a completely manual manner such that it meets both aesthetical criteria and stability requirements.

The solution to this problem suggested in claim 1 of the present application is thus based on an inventive step (Article 33(3) PCT) since it is not disclosed in or rendered obvious by the prior art that the surface of the prosthesis and the control surface are displayed together on a monitor. Instead, an automatic correction is suggested in the prior art when the wall thickness minimum value falls below a certain value; here, the user cannot intervene with regard to, e.g., an aesthetical point of view (D1, page 8, lines 4-12).

Claims 2-11 depend on claim 1 are thus also meet the PCT requirements with regard to novelty and inventive step.

Re item VII

Certain deficiencies of the international application

1. Independent claim 1 is not drafted in the two-part form according to Rule 6.3(b) PCT. In the present case, however, the two-part form seems to be appropriate. Consequently, the features known in combination from the prior art (document D1) should be

summarised in the preamble and the other features should be listed in the characterising portion.

2. In order to meet the requirements of Rule 5.1(a)(ii) PCT, document D1 is to be mentioned in the description; its relevant content is to be briefly discussed. Applicant should make clear in the description which features of the subject-matter of independent claim 1 are already known from document D1.

Claims (proposal of July 13, 2005)

1. A method for processing data about the three-dimensional shape of a dental prosthesis (14), the method comprising the steps of:
 - a) providing input data which represent a three-dimensional surface of the tooth stump (10) prepared for the prosthesis (14);
 - b) providing minimal stability requirements for the prosthesis (14);
 - c) generating control data from said input data, said control data representing a control surface which meets the minimal stability requirements;
 - d) generating design data which represent the three-dimensional shape of the prosthesis (14);
 - e) displaying the shape of the prosthesis (14) together with the control surface on a monitor;.

wherein

 - f) the design data are modified by the user based on a visual comparison of the displayed design data and the displayed control surface in order to meet the minimal stability requirements; and
 - g) the actual design of the prosthesis (14) which corresponds to the modified design data is displayed together with the control surface.
2. The method according to claim 1, wherein in step d) the design data are generated from the input data.
3. The method according to any of the preceding claims, wherein the outer surface of the prosthesis (14) is scaled differently in at least two spatial axes such that a given preparation margin (16) remains thereby unchanged.
4. The method according to any of the preceding claims, wherein the control surface exactly meets the minimal stability requirements.

5. The method according to any of the preceding claims being performed using a computer program.
6. Data processing system for performing a method according to any of the preceding claims, comprising:
 - an input device for the data required in the method;
 - a central unit connected to the input device, the program for processing the data according to the method running on the central unit;
 - a display device connected to the central unit for the design of the prosthesis (14) and the control surface.
7. Computer program being adapted to perform the method according to any of claims 1 - 5.
8. Computer program that, when run on a computer, performs the method according to any of claims 1 to 5.
9. Computer program comprising instructions that perform the method according to any of claims 1 to 5.
10. Computer program implementing the method according to any of claims 1 to 5.
11. Data carrier carrying a computer program according to any of claims 7 - 10.